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Evaluation of Student Achievement

A Resource Guide for Teachers

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EVALUATION OF STUDENT ACHIEVEMENT

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- Teachers, supervisors, co-ordinators, research officers, and school principals at all levels, some nominated by teachers' professional organizations;
- directors and superintendents of education from separate school boards and boards of education;
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INTRODUCTION

In many respects, Evaluation of Student Achievement reflects the "state of the art" as indicated by a review of current literature and research findings, the examination of school evaluation and reporting policies and practices, as well as by comments and responses from practising teachers and administrators.

This resource guide provides a descriptive rather than a prescriptive treatment of the process of evaluation, and outlines a broad range of evaluative approaches and concepts. It has the potential of provoking interest and reconsideration of evaluation and reporting methods in a school or system, and of stimulating new thought, in the light of knowledge of current practice.

Evaluating student achievement remains one of the most important aspects of the total education process. Thus it follows that the evaluation and interpretation of what a child has learned should not be an activity conducted outside or apart from instruction, but should be integral to it.

In recent times, the educational system at all levels has come under increasing pressure to account for the quality of education provided for our youth. The question is being asked, "What have these students learned?"

Parents and the public have a right to expect accurate and concise information about the progress and learnings

of children in the education system. In fact, the education system has the professional responsibility to provide this information and must be prepared to stand behind its accuracy and objectivity.

In order to help interested educators achieve this very practical goal, this guide has several objectives:

- to outline basic principles of effective evaluation of student achievement;
- to clarify the responsibilities of teachers and others involved in the teaching-learning-evaluating process;
- to describe and analyze procedures that have been and are currently being followed under the aegis of measurement and evaluation;
- to identify an assortment of effective recording techniques used to facilitate meaningful data collection;
- to review a variety of methods and procedures related to "grading".

With these objectives in mind, then, it is the overall purpose of this study document to stimulate, encourage, and motivate educators at all levels to examine and reconsider, in the light of the document's impact, their current policies and practices in the evaluation of student achievement. It is hoped that students and teachers may work together in an atmosphere characterized by public confidence, a confidence that is based on a working knowledge and understanding of evaluative policies and practices in education.

Rationale

The most lasting result of effective evaluation in school is an adult who can base decisions on personal standards.

This long-term aim is only one outcome of evaluation. It is worth special mention, however, because it has far-reaching effects on the character of the society in which the graduates of our schools will live. A society composed of individuals capable of making their own decisions is quite different from one in which the majority of citizens are swayed by the opinions and reactions of others.

Students can develop such inner direction by frequently practising self-evaluation. For this reason, there is a section on the techniques of self-evaluation in Chapter II. However, in the hands of a competent teacher, all techniques of evaluation should help students to achieve the ultimate goal of honest self-evaluation.

The task of setting one's own standards and living by them is not likely to be learned quickly. Students will require opportunities to practise self-evaluation with the help and guidance of teachers throughout the educational continuum. In addition, evaluation should provide the teacher with the means to identify the needs of individual students, to assess his or her own teaching, to judge whether the original objectives were

too lofty or too easily grasped, and to decide what amendments to individual or group programs are needed.

Evaluation should provide the basis for enlightening reports for parents and others concerned with the student's progress and program. The teacher has the responsibility for ensuring that evaluation achieves both long-term and immediate aims: information for those outside the classroom, a basis for further learning within the classroom, and habits of self-evaluation and inner-direction for the citizen of tomorrow.

Evaluation should go well beyond simple measurement of students' academic achievement. Measurement must be combined with comparisons to standards and with judgements about standards.

The following principles might be considered as the basis for evaluation:

. Assessment must be realistic and economical. A teacher can attend to only so many situations and students at a time. If too much time is devoted to writing and defining objectives or to observation, testing, and drawing conclusions, the teacher will neglect other important aspects of teaching.

- Evaluation requires caution and humility on the part of the teacher. Even the best evaluations are approximate, correct only for a limited situation and time. The teacher must be aware of these limitations and should repeat, vary, and adjust assessments, aware that they are constantly running behind the real events of learning.

- Continuous evaluation of student achievement must be an integral part of the teaching-learning process. In any learning situation, students either are succeeding and moving on or are experiencing difficulty and thus in need of redirection or additional help. On-going assessment identifies difficulties quickly and provides a basis for immediate action.

- Evaluation must include both self and others if it is to have positive effects. As students gain experience in shared evaluation of their progress, they should learn more, both directly and indirectly, about themselves: their achievements, abilities, interests, aspirations, and weaknesses.

- Evaluation must go beyond the cognitive and psychomotor areas to an exploration of interests, values, and attitudes. It is in the diagnosis of these affective areas that some of the basic aspects of life are touched.

. Standards of achievement must depend on age, ability, and aptitude. They cannot be made absolute and applicable to all students without denying the wide range of differences and circumstances that affect learning.

. Teachers must use a variety of evaluation techniques in order to obtain information on the different aspects of student learning, thus providing a reliable foundation for judgement, decisions, and amendments of judgement.

. When standardized tests and other objective instruments are used, the most significant factor in evaluation is still the informed judgement of the teacher in interpreting the test and in relating the evidence of the test to other evidence, to the particular student or group, and to the learning situation.

. The form of the evaluation should be appropriate to the task, the kind of learning, and the stage of learning. It makes little sense, for example, to evaluate a child's experiences in oral French by means of written exercises. The objectives of structured learning (such as parts of arithmetic) differ from the objectives of learning that has less obvious sequences (such as reading or drama). In the latter case, learning depends on personal response and expressive objectives.

- Care must always be taken to ensure that the effect of evaluation is constructive. Some evaluation techniques increase a student's feelings of personal worth and of what is important in his learning; others diminish both.

- The concept of failure must be redefined. It is recognized that all students may fail at something daily, but it is undesirable and irresponsible to allow students to accumulate failure over a period of time. Evaluation can provide the perspective on student performance necessary to both teacher and student so that causes of low achievement can be identified and appropriate modifications in program or procedure undertaken without delay.

- In order for evaluation to be effective, there must be communication in many directions: student to student, student to teacher, teacher to student, and teacher to colleagues and parents. There must be effective communication not only of performance but of goals, expectations, and criteria for evaluating performance. Students should understand the immediate purpose of their studies, what they are expected to learn, and how they can help demonstrate their learning to themselves and others.

CHAPTER I: STANDARDS, GOALS, OBJECTIVES, AND PLANNING

The first step is to measure whatever can be easily measured. This is okay as far as it goes.

The second step is to disregard that which can't be measured or give it an arbitrary quantitative value. This is artificial and misleading.

The third step is to presume that what can't be measured easily really isn't very important. This is blindness.

The fourth step is to say that what can't be easily measured really doesn't exist. This is suicide.

Daniel Yankelovich
The Atlantic, September 1972

This chapter is intended to answer three basic questions connected with the evaluation of student achievement:

- How can standards by identified?
- How can classroom objectives be established?
- What planning procedures can be developed for the attainment of established goals and standards?

The relationship among goals, objectives, standards, and planning is one that can only be fully realized in the classroom. Although outside influences from the province, the public, the school board, and the school will help to establish standards, set goals, and provide patterns for planning, it is teachers and students who need to find harmonious and appropriate ways of putting them into practice.

There is no obvious or logical sequence in making decisions about evaluations of student achievement.

Should standards be considered first? Can objectives be established before planning takes place? In examining the interedependence of standards, goals, objectives, and planning, it is first necessary to look at these factors independently.

Standards

The reason for the generally imprecise use of the word standards is understandable. The dictionary meaning is too abstract to be applied with equal accuracy to the different expectations of students, teachers, administrators, parents, employers, and universities towards learning. Although it is not easy to define the word in these different contexts, it is possible, and desirable, to identify some of the probable meanings. An understanding of the different terms of reference will improve communication between these groups and lead to increased understanding and respect.

- For the community, standards frequently refers either to a general expectation of competence or to an absolute level of achievement to which many may aspire but which few attain.

- A school system may use standards to indicate the various levels of achievement to be reached at different stages of education; these standards are the objective criteria used to assess the success of a large number of students or the work of a group of schools.

- Teachers often apply standards to the performance objectives they establish for completion of a learning unit or a course. These objectives might represent the maximum achievement expected of each individual student or the minimum level expected of the majority.

- For students, standards may be self-determined objectives and a certain level of personal aspiration.

- Universities, business, industry, and the professions use standards to refer to the prerequisites that establish criteria for ensuring that only those likely to succeed will be admitted to further education or employment.

In the search for common ground among these possible meanings, it would seem that all groups view standards as desirable levels of attainment at various developmental stages of learning. The task for individual teachers and students, then, is to determine how to identify standards for a particular stage of learning.

Those who are concerned with the quality of education agree that standards should be as high as possible. They also believe that standards should take full account of the range of individual ability and the circumstances of learning.

If we identify standards as desirable levels of performance at various developmental stages of learning, we must also recognize that students will reach those stages at different times. To establish uniform standards for all students to reach by a predetermined time is to ignore the fact that young people learn at varying rates.

Unfortunately, the rejection of a common standard for all students of a given age or grade has often been equated with the absence of standards. This position is illogical. If one is concerned with promoting the highest level of individual achievement, there is no defensible educational standard beyond that defined by the individual's capacities.

At specialized levels of higher education, there may well be a need for uniform standards that are not relevant in earlier years. This need is particularly evident where the object of study is to acquire professional skills to be exercised for the health and welfare of society. In the public interest, a uniform level of basic competence must be specified.

In identifying appropriate standards and setting levels of performance for students, teachers should use a variety of resources. These may stem from past experience, personal or collective, or from current observations. The following are examples of the resources available to teachers:

. *Theory: I read that in second-language acquisition children must learn to listen and to hear before they are able to pronounce new sounds and new words correctly.*

. *Personal experience: I know that in the past, most of my students have learned to make effective use of the library resources for independent research and personal development.*

. *Collective experience: Teachers know that students who have acquired the skills of effective communication in English courses should be expected to apply those skills with equal facility in other subjects.*

. *Developmental norms: Piaget says that a child should be able to demonstrate understanding of conservation of quantity by the age of six or seven and this prior understanding is basic to the child's learning to read for comprehension, i.e., co-ordinating related ideas.*

. *School expectations: The standards provide that most students should have developed an efficient method of performing each of the four arithmetic operations - addition, subtraction, multiplication, and division - before entering the Intermediate Division.*

. *Testing norms: This test is designed so that the scores provide one evidence of a predictable chance of success in an advanced-level course in science.*

In the process described here, teachers are applying standards of performance to what is to be learned. They are also relating these standards to what is appropriate for the individual learner, age group, or class. These standards are related also to norms of performance, to developmental levels, and to what students might be accomplishing at a particular level or after a particular learning experience.

It is a natural and necessary part of this process for teachers to make comparisons. They compare their own expectations with the expectations of others. They compare their expectations with their knowledge of what is actually being achieved. They may compare achievement with some ideal standard of performance.

It should be quite clear, however, that these comparisons are being made to test the appropriateness of the standards, rather than to penalize the students who are attempting to reach them. Furthermore, comparison with someone else's standard of performance is seldom relevant: competition in an unequal race is hardly an effective way of motivating the weaker competitor.

In deciding on standards, here is a series of questions that teachers, administrators, or others might ask themselves:

. How does this performance compare with that of other (presumably similar) students?

- Does the performance meet expectations for the student or the group?

- Does the performance meet some specified prerequisite for further learning?

- Does the standard meet the demands for competence at the end of a stage of learning set by the teacher, the school, the school system, or the community?

- Does the performance indicate that expectations for the student need to be revised?

- How can standards for the various aspects and levels of learning be balanced, integrated, or placed on a continuum?

The answers to these questions will depend on several factors: whether the standard is a realistic expectation or an ideal aspiration; whether it is a prerequisite for a new stage of learning or a summary of learning just completed; whether it is a guide to be used in a classroom or the basis for external monitoring. In all cases, however, standards of achievement must be related to the students' age, ability, and aptitude. Standards cannot be made absolute and applicable to all students without denying the wide range of differences and circumstances in those students themselves.

Goals and Objectives

Goals as used here refers to broad, generalized, long-term expectations of the educational system. Objectives refers to the more individualized, specific, and immediate application of these goals to the classroom. At the most basic level, teachers and students set objectives by defining the purposes and expected outcomes of particular learning experiences. This is not necessarily accomplished by using only one method or by drawing up detailed lists of performance criteria that require students to display specific overt responses. All content or teaching and learning strategies will not necessarily be dictated by the objectives. The setting of objectives, however, should be exact enough to help teachers and students to choose appropriate learning experiences and to evaluate results.

All objectives must be consistent with the goals of education. The setting of objectives, however, usually begins in one of two ways. In the first, specific objectives appropriate to a situation are developed from the general goals of education. In the second, objectives stem from the situation, for example, the teacher examines the classroom activities and asks what skills, concepts, and attitudes are expected and what are other desirable outcomes. Both of these methods require teachers and students to consider sooner or later what they are doing and why; and how the content, sequences, and materials of learning affect the outcomes.

Planning

Effective teaching and learning result from planning. For some experienced teachers, planning is instinctive and intuitive, requiring little in the way of detailed or written outlines. For others, it is a more specifically articulated and organized sequencing of learning activities. Whatever the process, it must recognize that the goals of education are related to the means that are chosen to achieve them. Thus, the goals of the province should be understood by teachers and reflected in the kinds of learning selected for and by students.

Planning depends also on certain basic assumptions regarding:

- what should be learned by students at a given stage in order to further their intellectual, social, moral, physical, and emotional development;
- the differing ways in which students develop and learn.
- the kinds and levels of knowledge (concepts, skills, strategies, attitudes, or values);
- the nature of knowledge (subject content, disciplines of learning, techniques of inquiry);

. the kinds of experience that lead to various types of learning (learning for specific purposes, as a tool to further learning, or as valuable in itself).

Flexibility in planning is also essential. Although planning must precede teaching, no teacher can anticipate in detail exactly how a lesson, activity, or project will develop. Nor can a teacher always fully estimate in advance the extent and effect of the learning that has been planned. In the classroom, good teachers have always made use of informal, personal, and perceptive judgements to adapt to particular circumstances and student needs. Planning, therefore, must allow changes and modifications during the course of teaching.

Planning is evident in the objectives that have been established for a lesson, unit, or course; in the content that has been selected for a particular area of learning; and in the activities that have been designed to match content with objectives. Methods of evaluation should be implicit in any planning procedure. Both the planning and evaluation behind the activities and experiences of the following two examples can be easily seen.

	Primary Division	*Senior Division*
Activity	*Pouring water, using an assortment of containers (some of equal capacity)*	*Mixing potassium iodide solution and lead nitrate solution*
Vocabulary	*Pouring, equal, level, volume, fill, full, overflowing, container*	*Solution, mixture, insoluble, liquid, solid, change*
Knowledge	*Equality of containers and contents, capacity equivalence*	*A new yellow material is produced*
Skills	*Pouring, observing, comparing, ordering*	*Observation and inference*
Concepts	*Conservation of liquid*	*Chemical change*
Basis for evaluation	*Teacher observation and questioning of students*	*Laboratory report*

In any learning situation, students may be engaged in individual assignments, inquiry work, or independent study programs. They may also work in groups, planning and carrying out projects or practising skills. Although these approaches do not necessarily have predetermined objectives related to units of study, particular content, or specific skills and ways of acquiring them, they do depend on some planning. For example, teachers must be aware of the kinds of experiences through which students can move at their own pace and in their own way; they must set criteria for the level of learning expected; and they must know what concepts are likely to spring from the available materials, assignments, and resources. By keeping records of these forecasts, teachers can build flexible but accurate maps of the way in which activities, experiences, and direct and indirect teaching lead to opportunities for acquiring skills and understanding. These records can also supply useful information about the different learning patterns of students.

Teaching and learning can be planned in many ways. However, for each method it is necessary to identify:

. the aims and objectives;

. the ideas, skills, and attitudes needed by students at a particular stage of their development;

. the resources available;

. the teaching and learning strategies that will lead

most effectively to the development of the necessary ideas, skills, and attitudes;

- the methods of evaluation.

Chapter II: Procedures of Evaluation

Our measurements are not perfectly accurate. We could devote ourselves to improving the precision of our instruments, but are there not higher-priority tasks? For the evaluation of curricula, I believe that we should postpone our concern for greater precision. We should demonstrate first our awareness of a full array of teaching and learning phenomena. We should extend to this array our ability to observe and pass judgement. We should commit ourselves to a more complete description.

Robert E. Stake.

"Toward a Technology for the Evaluation of Educational Programs" in Perspectives of Curriculum Evaluation, 1967.

Skill in evaluation is an essential component of the teaching-learning process. This chapter emphasizes a variety of evaluation techniques. Practical suggestions are included wherever possible. In considering evaluation processes, teachers might examine the following basic questions:

- What are the demandsof effective evaluation procedures?
- What should be the focus of the evaluation?
- Who should be involved in the evaluation?
- How should the evaluation be conducted, that is, what techniques should be used, what data collected and recorded, when and where should evaluation take place, and what effects should be produced?

- How should the results of the evaluation be used and who should have access to them?

Although most evaluation will consider whether intended goals and objectives have been attained, attention should also be given to evaluating the unplanned effects of educational experiences. Student characteristics that affect learning should also be revealed through the evaluation procedure.

The Teacher

Because evaluation of student achievement requires considerable knowledge and expertise, it makes heavy demands on the teacher. Evaluation reflects the teacher's knowledge of the various aspects of the curriculum. The teacher must know the rules, concepts, techniques, and skills that form a subject area. Only through such broad knowledge can the skills be identified, the material classified, the information organized, and valid evaluation be devised so that the learning experience is made significant for every student.

It is equally important to be aware of the human and cultural values of any subject area. Thus, for example, the teacher should be able to see mathematics as part of human history rather than as a narrow series of routine skills, and, in the same way, scientific knowledge can be seen as a contribution to the way people live rather than as isolated fragments of facts. Such a broad view is necessary for evaluation to reflect all aspects of the curriculum.

The teacher must also be knowledgeable about pedagogy. It is important, for example, to know how knowledge is acquired, how objectives can be defined, and how teaching strategies can be planned to achieve desired ends.

Procedures

Classroom evaluation methods should be chosen to ensure maximum learning and to increase the students' level of maturity. This purpose is of particular importance in a society where students are often granted more independence outside the classroom than inside it. The solution to such disparity may be to help students achieve the maturity they need to handle the independence they already have, that is, to learn to define personal goals and values, to chart a course towards achieving them, and to evaluate their progress. It should be noted that maturity may be gained through evaluation procedures as much as through any area of the school program. This is particularly so in the case of evaluation that provides students with standards of excellence towards which to work rather than with comparision with other students or with external criteria.

It is important that there be different kinds of evaluation with different purposes. For example, it is necessary to distinguish between evaluation that depends upon a right or wrong answer and the kind that is applied to more subjective matters such as original writing or painting; between evaluation of an individual's work and that of a group or class; and between evaluation of product (the end result) and that of process. Process includes consideration of how children learn: whether they

learn from errors or whether they handle a task with attention and persistence. Process is a key ingredient in all education. Teachers may improve their evaluation of process through discussions with colleagues and by drawing up a list of desirable aspects of process.

Once the objectives for student-learning procedures and the general areas to be evaluated have been established, the teacher will decide on the methods most likely to provide the required information. In this regard a further distinction between summative and formative evaluation should be made.

Summative evaluation takes place at the end of a learning episode - a unit of study, a school term, or a period of years - when the purpose is to judge the student's achievement in relation to some standard of excellence or in relation to some body of knowledge he or she has attempted to learn or would next like to learn.

Formative evaluation occurs during the course of learning; evaluation of student progress is made from the beginning of a program or unit of study until the end of it. The purpose of formative evaluation is to keep both students and teachers aware of objectives to be achieved and to inform them of progress. When progress falters, a diagnosis is made and the curriculum, the material, the teaching strategy, or the student's own approach, is adjusted.

This chapter outlines considerations for drawing up effective evaluation procedures in the classroom. The first consideration is that evaluation should lend itself to systematic advance planning. If a procedure is neither comprehensive nor feasible,

deficiencies should be caught during the planning rather than during use.

In planning the classroom program and the evaluation procedures relating to it, the teacher should:

- set lesson and course objectives;
- choose procedures, conditions, and activities through which learning can take place;
- decide on criteria for judging each student's progress in relation to the objectives;
- select the means (checklists, types of observations, and so on) that will give the information required to make judgements about progress;
- decide how to record and classify data;
- choose a method of checking results against goals and objectives;
- choose a method of reporting.

An evaluation system should provide information about:

- what the student has learned;
- whether the learning that occurred was what was originally intended;
- whether the student is ready for a particular new activity or learning experience;
- what alterations in program might be needed for certain students;
- whether the objectives are compatible with the students' levels of development;
- whether criteria chosen for judging students are realistic;

- whether the pace of learning and the opportunity for repetition and reinforcement are adequate;
- whether a particular instructional approach or certain materials are effective.

A system of evaluation should also be comprehensive. The teacher obtains information by means of a wide range of procedures, including direct observation of behaviour, analysis of products made by students, diagnostic tests, mastery tests, achievement tests, teacher-made tests, and other activities in and outside the classroom; and by means of the active involvement of others (parents, students, and other teachers or advisers who meet the student in other settings) in providing information, where this information is relevant to the teacher's need to make evaluative judgements.

Teachers may find the following outline of evaluation procedures helpful. Some general suggestions, examples, and cautions are included, but the steps are not presented in detail. Annotated references will be found in the bibiliography section of this document.

A. Observation

A teacher's observation and review of assignments, projects, daily work, and other student productions is a basic method of obtaining a wealth of information regarding individual and group learning. Direct observation has the following strengths:

- it provides assessment of a wide range of characteristics - affective, psychomotor, cognitive;
- it provides immediate feedback on the results of instruction;

- it is useful for evaluating unexpected results;
- it can be used for obtaining diagnostic patterns of students' strengths and weaknesses as well as for determining levels of school achievement;
- it serves as a supplement to data available from other sources;
- it monitors important outcomes without encroaching on instructional time and disrupting the class;
- it can provide both quantitative and qualitative information.

Teachers must carefully determine what is significant enough to observe and record. There is a danger that teacher observations will be overly coloured by personal expectations and preferences. Thus, observation through both eyes and ears should reflect only what students actually do or say.

The recording of the results of observation requires care in order to ensure that useful information is not forgotten or lost. Even if observations are properly made and recorded, they are subject to misinterpretation. Interpretation should wait until a representative sample is available.

Observation may focus on:

- specific tasks;
- open assignments (to see how students respond to unstructured situations);
- a student's performance in a group (that is, social skills);

- a particular project in which a student is required to initiate activity, to find references, and to report to the class;
- samples of student work (which the teacher can observe at leisure): for example, samples of handwriting or drawing provide a clue to the student's skill and level of articulation;
- gymnastic activities oriented to the evaluation of specific skills such as balance, stamina, speed, posture, transfer of weight, or bodily control.

The following approach, developed by a secondary school teacher, illustrates how purposeful observation may occur:

> *I look at the students' work from four perspectives and I apply these to both classroom and project work. The four perspectives are:*
>
> 1. *Do they work? Are students paying attention to the work? Do they become involved with the work? Do they understand the concepts developed in the work?*
>
> 2. *How do they work with others? In this subject area, working with others is very important. I'm not as interested in their co-operation as I am in their feeling for other people's ideas. Are they inquisitive about the ideas of others? Are they critically receptive to other people?*
>
> 3. *How do they overcome creative problems? Do they strive to reach an understanding of their imagination and the imagination of others? I look for their effort in overcoming problems. Do they follow them through? Do they know when to give up? Do they take non-productive short cuts? Do they try to discover the nature of the problem with which they are working?*

4. *How far do they extend themselves? Will students try things they have never done before? How do they relate to a new concept? Are they willing to take a chance on a unique way of approaching a problem? Are they willing to risk failure in a creative task by taking a perspective which is new and unique to them?*

It should be noted that these four perspectives can be applied in a comparison with other students. They are useful in that they offer a more complete picture of the student's work than the marking of a finished production or project.

While the focus is on specific areas, significant behaviour outside these areas should also be noted and recorded. Records of observations are important and should be factual descriptions of what the student did or said. A record of critical incidents can provide insights into the behaviour and motivations of particular individuals. Tape recording and videotaping of students, where possible, are also effective means of recording data about student development.

A diary of significant events in the day-to-day life of the class or for two or three specific students is an excellent method of recording observations and can be of value in several ways. It can provide a basis for the preparation of descriptive anecdotal comments or a checklist relative to the affective domain of student growth and development. It can also provide additional information for the teacher to make judgements.

Individual folders of student work are effective for keeping records of learning. Each folder, containing representative samples of work, should remain in the classroom to be used jointly by individual students and by the teacher. In this way students will be aware of their exact progress in achievement and development. They can also learn to select their own samples of work. The folder provides essential information for parent-teacher conferences and teacher-student discussions. The object of keeping a folder is to facilitate collection of the most relevant data that reflects the student's development.

B. Teacher-Student Interviews

Observing and interviewing are similar ways of gathering information. Although the preparation for an interview is different, once it is in progress, the method for obtaining information is through observation.

Interviews can be used to obtain information regarding interests, goals, achievement of objectives, learning difficulties, attitudes, and unplanned effects. They can provide the teacher with additional information to cope with difficult behaviour and can be used to help students set goals for self-improvement. Interviews can be used to give the student an oral examination or to provide the student with evaluative feedback and help in using it.

The following cautions should be observed:

- Poorly focused interviews provide little useful information.
- Interviews are a supplement to other techniques, not a primary procedure.
- Distortions can result from personal relationships in the interview; care must be taken to minimize these distortions.
- Effective interviewing depends on advance planning: ask yourself, What is the purpose of the interview? What questions would be appropriate?
- The interview should be conducted in some degree of privacy.
- The student should be put at ease.
- The student should be encouraged to be open and honest in his or her remarks.
- Judgemental remarks from the teacher should be avoided during the interview.
- Sufficient time should be allowed for the interview.
- Recording techniques should not curtail the open flow of ideas.
- Information gained from an interview should be interpreted carefully.

C. Student Self-Evaluation

A fresh, exciting and humanistic development in contemporary education is the growing emphasis placed on the student's subjective and personal evaluation of himself, a dominant influence on his success in school. This development is fresh because the self concept has been virtually ignored by psychology and largely overlooked by education. It is exciting because it provides teachers with a set of unifying principles which ties together seemingly unrelated aspects of life in classrooms and allows them to understand and influence the conduct of students. It is

humanistic because it cares about the individual and is primarily concerned with what takes place in his personal world.

William E. Purkey
Self Concept and School Achievement, 1970

The individual who can take an uncompromising look at his own actions and his own principles is rare indeed. Nevertheless, such ideal maturity is the ultimate aim of all techniques in self-evaluation. Although this aim is rarely attainable, fortunately other aims of self-evaluation are more likely to be discernible within the student's educational career. Students will come to see what they are learning and why. In varying degrees, they will become aware of their own strengths and weaknesses and will seek ways to remedy their shortcomings and to expand on the range of their talents. In most cases, students will become aware that they have a personal way of learning and they will gain the confidence to use their own learning styles in finding out what they want to know. Because of such growing self-knowledge, they will have a firmer base on which to communicate with others; that is, they will know what it is they want to say.

Because self-evaluation is the aim of all evaluation, it has been prominent from the very beginning of this discussion. Although the techniques discussed elsewhere in these pages should all be used to further this aim, this section deals exclusively with techniques by which

students take the first tentative steps at evaluating themselves.

For successful self-appraisal there must be mutual respect between teacher and student. If the teacher imposes arbitrary standards, then students will not learn to set their own goals and expectations; if the teacher is seen as inconsistent and unfair, then self-appraisal may be stifled. The teacher must challenge students, yet demonstrate the belief that students can be trusted to make decisions and assess their own growth.

When students engage in self-evaluation, they are usually fair and objective and are often, in fact, harder on themselves than the teacher would be. Such conscientiousness is often related to their respect for their teachers. When students respect their teachers, they want to grade and evaluate themselves fairly so that teachers will respect them. Thus self-evaluation can both come from and engender mutual respect. It is a growth process that can be facilitated by a patient teacher.

The kind and the success of self-evaluation will depend on the philosophy and expertise of the teacher and the school: it should be noted, however, that if evaluation is restricted to programmed material and tests with grades as the only outcome, many possibilities for learning will be ignored. If students are conditioned to work for grades and to depend only on external criteria, they are likely to work simply to complete the course or assignment and to

evaluate their success by the grade awarded rather than by the effects of permanent learning.

The teacher must begin quite early to prepare children to understand their active role in the learning process and the purpose and helpfulness of evaluation. In this way, evaluation can become an effective component of the child's education from the very beginning.

The teacher can encourage self-appraisal by creating opportunities for non-threatening dialogue. Even with young students, teachers can use simple, concrete methods to introduce techniques for later use. For example, the student might be asked:

- What have you learned?
- Why do you say so?
- What can you do now with what you have learned?

These three questions can be the basis for an appraisal of a lesson, of a week's work, or of a major topic of study.

In the Intermediate and Senior Divisions, individual conferences with several students per day can be most profitable, but generally only when the students write their comments in advance. Appraisals made by the teachers and the student can be discussed and compared and may even be entered jointly on the report card. Teachers might also consider asking for student reaction to preliminary drafts of Achievement Reports. This approach would give students opportunities to respond to issues of accuracy, fairness, and inference. Particularly, in the Intermediate and Senior

Divisions, where a number of staff members may be preparing evaluations, students can deal with a single subject and person at a time and not have to answer to a complete summary of achievement all at once. Students learn to become candid and perceptive; teachers learn that they can trust students to appraise their own achievements honestly.

Teachers should ensure that there is ample scope for student experience with value-judgements, developing value systems, definition and selection of alternatives, and appraisal of one's own and others' work. Project work should give opportunity for reporting what was done, how it was planned, how resources were used, what roles were adopted, and what situations gave rise to evaluation (of self, of peers, of the situation and materials, and of instruction). There is an evident need for establishing both task and self-referenced judgements about quality and achievement in areas such as creative writing, drama which involves the responses of many others, gymnastics, and dance.

Self-evaluation should be used more as students gain maturity and practice. The teacher's role will be to arrange situations in which students can practise this ability. There should be a steady progression from criteria developed by the teacher (external) towards criteria developed by the student (internal).

The following is a list of general suggestions to facilitate student self-evaluation:

- To the extent that teachers apply effective principles and procedures of evaluation to themselves, they will be teaching principles of evaluation to their students through example.
- An atmosphere that encourages self-evaluation should characterize the classroom. Teachers can help create such an atmosphere by frequently asking, What do you think?
- Classroom activities should be conducted in such a way that student efforts towards self-evaluation result in satisfying experiences.
- Self-evaluation should be encouraged but not forced. Students should make only those self-evaluations that they feel ready to make.
- Individual conferences for joint evaluation and planning should be held as frequently as time permits, especially with students who are not doing well at self-evaluation on their own.
- Class discussions should be held for clarifying important goals and selecting criteria for self-evaluation.

Here is an example of an approach employed by a secondary school science department head to encourage student self-evaluation. These instructions are distributed for a mid-term look-at-yourself:

You've been here since September and you've changed in some ways. In what ways have you changed? Are the changes good, or bad, or neither? Did you make the changes, or did you just allow them to happen, or did they happen without you knowing at the time? In what ways didn't you change? Was this good, or bad, or neither? Are you satisfied with what you are learning -- about yourself and others, and about the subject matter? What are you doing to improve yourself? Is it working? Do you need ideas on how to and what to improve? Are you doing as much as you want to do? Are you doing as well as you want to?

Things to think about as you are answering these questions, and assessing yourself:

- *your attitudes towards yourself, others, the subject matter, learning, school, etc.*
- *confidence*
- *maturity*
- *responsibility*
- *question-asking ability*
- *question-answering ability*
- *experimenting*
- *note-making*
- *expressing yourself*
- *creativity*
- *thinking*
- *subject matter - amount, understanding*
- *interest*
- *boredom*

Start looking at yourself now and by Monday, _____ you'll be ready to let me have your assessment of your term so far.

These instructions are distributed a week before an end-of-the-term evaluation:

Your comment to your parents should tell them what you've accomplished (learned? done?) in Science this term, what you've failed to accomplish, what you consider are your strengths, your weaknesses, how you've improved each strength or weakness over the term or did'nt, and why. Try to be completely honest. I'll be making a comment on the other side of yours. Your parent will be making a comment on the same sheet as well, and it will only have a value if we communicate something of value to each other. It should be a positive comment.

These instructions are distributed a few days before the end of the school year:

Assessment of yourself for the year

Since the beginning of the school year in September you have changed in many ways, you have learned many things, you have grown, matured in many areas. Specific examples to consider in making an assessment of your year include areas of intellect, emotion, learning, creativity, imagination, ability to ask good questions, ability to find answers to them, curiosity, concentration, thinking (analytical, intuitive), subject matter, skills, anything else you can think of.

On the squared paper - For the assessment of yourself for the year (which will be going home with the report card), write out what you wish to go to your parents above your signature. Add anything else which you would like to write for your benefit and mine below the signature.

What do you consider that you've learned this year which is most important to you? Why? Anything else? What has been of the least importance?

On the blank paper - Just what you've written above your signature. This is the copy going home to your parents. The squared paper I'm keeping in your file for my benefit.

The following are one student's comments to his parents in December, April and June, along with the teacher's comments and the parent's comments:

Mom and Dad

Accomplishments: From the Laboratory Guide for Physics, the following experiments:

1. *Short Time Intervals*
2. *Large Distances*
3. *Small Distances*
4. *Motion, Speed, and Acceleration*
5. *Refraction*

That is all of unit one and part of unit two (required ones). Other experiments include one on nodes and such written reports as concentration, and the weighing of objects. The latter was constructed to make us think, as we were weighing a bag of potatoes and a feather.

Failed to Accomplish: So far I have not completed the project on stars. I have a method if time allows me to put it in action properly. I have not studied as many chapters as I should have.

Strengths: Theories and experiment procedures.

Weaknesses: Measurement skills and the notations involved. The math involved.

Improvements: In math (just a little) and the concept of velocity.

Where I didn't Improve: My mark didn't improve from grade 10. However, this year, starting at the bottom, I have no place to go but up.

Mr. and Mrs. _____

(student name) *is curious, careful in his experimenting, and asks relevant questions, is fairly creative. He has good potential for critical thinking and will develop it as he goes along. His knowledge of the subject matter is adequate, but the amount he has accomplished so far is not as much as it should be. He takes the initiative often in his group and gets along well with other students. I'll be talking to him soon about ways of improving and I'm sure he'll do well.*

(Teacher name)

Your comments?

(Student name) *is finding the work more difficult this year, but has a determination to stick with it and do as well as he can. It is very gratifying to us that his teachers are giving him so much help and encouragement.*

I trust his progress will justify the interest you have shown in him.

(Parent name)

D. Rating Scales

Rating scales can be used to evaluate a wide range of student performances or skills, for example, co-operation, speaking ability, health habits, oral reading. The teacher checks the degree to which the student has developed each skill. The forms vary widely, but some concept of scale is always involved.

> A descriptive scale describes each degree of progress in behavioral terms. A numerical scale assigns numerals for the various degrees of progress. A graphic scale is based on a horizontal line that represents a scale and the student's name is placed where it belongs on this line.

Rating scales are frequently used to record the results of observations. They are based on the assumption that all students will show some growth towards a desired goal, but that the growth will vary with each student. Often rating scales are the only means for assessing such skills as speaking ability. They are also useful when used several times with the same student; in gathering data to aid in self-evaluation; and in providing material for the teacher to use in discussing student progress and in preparing summary reports.

The following points should be carefully considered:

- Scales are difficult to use objectively; they can lead to premature conclusions.
- Care must be taken to avoid rating individual students in relation to performances by other students.
- It is essential to define clearly what the scale is to measure.
- Extremely long scale lines should be avoided; the resulting increase in reliability is so slight that the extra work is unjustified.
- The rating scale should be used to assess observable behaviour insofar as possible.
- It is useful to practise using the scale with another person in a joint rating of the same student's performance.
- Carefully selected commercial scales may be appropriate for classroom use.

Here are two examples of possible rating scales: A teacher of modern languages at the secondary level, using a scale from 0 to 5, assesses oral replies in the second language. The teacher states that over a period of time with every set of 20 ratings one can record a percentage mark so that each series of 20 observations of student competence constitutes an informal test. The following is a second possible rating scale:

Rating Scale

*NAME OF STUDENT*_____ *ROOM*_____

AGE _____ *DATE*_____

*NAME OF EVALUATOR*_____

Directions: Below are listed polarities of personal behaviour. Rate the individual by putting a checkmark on the most appropriate place on the scale.

1. *Awareness of self* — *Able to recognize true feelings and meaning of behaviour.* *High* | | | | | *Low*
2. *Sensitivity to others* — *Concerned about others and modifies behaviour accordingly.* | | | | |
3. *Creativity* — *Uses knowledge and media in unique and interesting ways.* | | | | |
4. *Receptivity* — *Highly open to his own and others' experience.* | | | | |
5. *Flexibility* — *Flexible, easily modifies his behaviour to meet change.* | | | | |
6. *Self-discipline* — *Has developed appropriate coping behaviours in meeting life's demands.* | | | | |
7. *Independence* — *Self-sufficient, minimal dependence on physical and social environment.* | | | | |
8. *Tolerance for ambiguity* — *Adjusts easily in unclear situations, can accept value or factual conflicts.* | | | | |

E. Checklists or Inventories

Checklists for evaluating student performance are similar to rating scales except that various points along the scale are not identified. Instead, checks are recorded on the form to indicate whether the student's performance has the required characteristics. Checklists usually consist of a number of skills or concepts to be learned in a unit of work.

It is often a matter of preference as to whether the instrument for measuring is constructed as a rating scale or a checklist. If the performance involves a large number of specific acts that must be observed, the checklist may be more suitable. If the performance can be readily described in terms of various degrees of excellence along a series of scales, the rating scale may be more suitable.

Checklists can be used by students as a developing record for self-evaluation. They enable the teacher to maintain a detailed record of student progress in the performance of various kinds of tasks with great economy of time and effort. They help the teacher write summary comments about student growth and development and are useful for communications with both students and parents. They also help the teacher determine how instruction should be sequenced.

Checklists must be carefully used, however. For example, care must be taken to use them objectively. Skills must be maintained after being checked. Furthermore, concepts are seldom acquired all at one time and therefore do not lend themselves to checklists.

The teacher and/or student might use a checklist to evaluate the following:

- the steps involved in performing a skill or in using a particular piece of equipment;
- activities and/or characteristics:
- goals or objectives;
- interests, hobbies, problems;
- topics or assignments.

Here are some examples of the use of checklists at various levels:

A teacher in the Primary Division may use checklists as a method of noting errors in arithmetic. Students' names would be listed down the left side of a piece of paper and skills marked in across the top. While marking worksheets or questioning the children, the teacher notes errors so that at the end of a week, the checklist shows which children need help with a particular skill.

When students in the Junior Division are working on assignments, a daily checklist would show the teacher the rate of individual progress and would motivate the students to complete assignments.

A teacher of business subjects at the secondary level may use individual charts in skill subjects to record weaknesses so that special attention can be given to them.

Checklists of a much broader kind, stipulating the average accomplishment in a subject area for each grade level as a kind of minimum-standard guide, can also be developed. At the end of each term, the subject teacher would check the list to determine review work for each student. Such lists can also be passed on to the next teacher. Here is a sample:

Critical Reading Skills

_____ _____

Name of student *Date of rating*

(Checkmark indicates satisfactory achievement.)

_____ *anticipating outcomes*

_____ *appreciating humour, plot*

_____ *classifying ideas*

_____ *comparing and contrasting*

_____ *critical thinking*

_____ *distinguishing fact and fancy*

_____ *distinguishing fact and opinion*

_____ *drawing conclusions*

_____ *establishing cause and effect*

_____ *establishing sequence*

_____ *evaluating author's attitude*

_____ *evaluating and reacting to ideas in light of the author's purpose*

_____ *evaluating and solving problems*

_____ *evaluating summaries*

_____ *finding information to prove or disprove a statement*

_____ *forming an opinion*

_____ *forming sensory impressions*

_____ *generalizing*

_____ *identifying elements of style*

_____ *identifying and evaluating character traits*

F. Questionnaires

Questionnaires are much like interviews, except that the questions are written down and the respondent records his or her own answers. Questionnaires take much less time of both teacher and student than do interviews. They are useful in evaluating the understanding of a group of students. They should be reasonably brief, very clear, and easily understood. Questionnaires may yield a variety of responses.

Teachers should be aware, however, that questionnaires may yield more superficial results than interviews: they may not be answered as thoughtfully as they would be if the questions were asked in an interview. In addition, questionnaires can have a built-in bias.

The following sample questionnaire is one that might be used by a Junior Division teacher:

Our Trip to the Dairy

Directions

I need to know what you learned on our visit to the dairy; I also need to know what we should talk about here in the classroom in order to learn even more about dairies. By answering the following questions very carefully, we will be able to decide what we will discuss in class. Be sure that your answers say only what you think. Do not put down what you think I would like to have you say or what you believe other students would give as answers. Your own ideas are what we want.

Be sure to read each question carefully before you answer it.

Write your answers on separate sheets -- not on this paper.

Put your name and the date at the top of each page of your answers.

1. *Write as much as you can about how milk is kept pure at the dairy.*
2. *Would you like to work in a dairy? Why, or why not?*
3. *The machines in the dairy were doing work formerly done by hand. Which machine do you think was doing the work of the largest number of people?*
4. *Did you see any kinds of foods made at the dairy that you did not know about before? If so, what were they?*
5. *What did you see or hear at the dairy that you would like to learn more about?*
6. *What concerns do you have as a result of the visit?*
7. *We need to know how much you benefited from the visit.*

   For this question, write the letter A, B, C, or D to show your choice:

   A. The visit was very useful; I learned a lot.
   B. The visit was useful, but was not the very best thing we could have done.
   C. The visit had some value, but much of it was a waste of time.
   D. The visit was a complete waste of time for me.

G. Participation Charts

A participation chart is a useful device for observing student participation in discussions, activities, and so on. The voluntary and oral nature of participation must be emphasized.

Participation charts provide:

- a record indicating who contributes, how often, and how usefully;
- evaluation of progress for both the individual and the group, allowing the teacher to make appropriate interventions;
- a variety of simple techniques that can be used to gain more definite data in differing circumstances;
- a means by which students can practise self-evaluation.

The following dangers should be noted:

- Large-group or whole-class discussions tend to inhibit participation by some students, making it more difficult for the teacher to sample and assess contributions reliably.
- The teacher must guard against over-generalization on the basis of data from this approach.
- If used to excess, this approach can stifle student receptivity and response.

In constructing a participation chart, the teacher should identify the topic or task set for the group; list objectives that the students may achieve; identify the types of contribution (information-giving, generalizing, inferring, persuading, forming value judgements, problem-solving, decision-making); and list the types of contributions in one column.

Here are illustrations of participation charts:

When recording participation in activities where participation is itself an object of instruction, one possible device could be the use of a number code as follows: 4 - major contribution, 3 - minor contribution, 2 - neutral contribution, 1 - non-participation, and 0 - absent from class. The number code can be used as weights and a crude index of performance derived by summing the entries for each student.

This method has been used in French-language classes where the object is to promote oral discussion. One teacher of French at the secondary level keeps a daily record of class participation using a rating scale of 0, 1, 2. He claims that the use of this technique has improved participation in discussion, encouraged the use of French, and indicated progress in fluency.

Topic - The United Nations

1. *Explain the origins of the United Nations.*
2. *Discuss the basic purposes of the United Nations.*
3. *Describe the basic structure of the United Nations.*
4. *Compare the United Nations with previous world organizations.*

Type of contribution	*David*	*Susan*	*Richard*	*Joe*	*Lynda*
Superior					
Secondary	*(In this area, checkmarks are made to indicate the value of each contribution made by a student).*				
Uncertain					
Detracting					

Type of contribution defined

Superior - *Introduction of a significant idea or clear argument*

Secondary - *Introduction of an important but minor idea*

Uncertain - *Contribution needs clarification*

Detracting - *Contribution confused, incorrect, off the subject, illogical, or detracts from discussion*

H. Classroom Tests and Examinations

While the majority of Ontario teachers and principals look upon the day-to-day observation of student work by a teacher as essential for gathering information, tests and examinations continue to hold an important place in the evaluation of student achievement.

There are many reasons for this. There is a certain fairness in providing the same task for each student, in presenting the test to all students at the same time, and in making firm decisions as to what are acceptable responses. Examination questions, test items, or exercises are also means by which teachers can pose problems to students. Such problems may involve the recall of learned information or the use of higher-order mental abilities.

The most commonly used types of test questions are the essay (or discussion) type, the objective (or short-answer) type, and the mathematical-problem type (used widely in mathematics and some sciences). Each type has its own strengths and weaknesses which must be considered when devising test items. More information about test construction can be found in the annotated references in the bibliography of this document.

However, when considering tests and examinations, it is important to distinguish between "teaching to the test" (attempting to fix in pupils' minds the answers to particular test questions) and teaching material covered by the test (attempting to help pupils become capable of answering questions like those in the test). The first lacks pedagogical validity. The second reflects purposeful teaching.

Teacher-devised tests are based on the content and objectives of a unit of study, a term, or a course of study for each particular classroom. Such tests assist teachers to clarify and define the educational objectives of a program. They can help to integrate evaluation with teaching and to motivate and direct student learning. Tests can also extend a teacher's observations of student behaviour, making these observations more precise and dependable.

In planning tests, teachers should note the following:

- Written tests provide an important basis, but not the only one, for evaluating student achievement.
- A last-minute test is likely to be a poor test.
- Tests should be designed to stress the understanding of basic principles and the ability to make practical applications rather than trivial details.
- A test should be thoroughly relevant to the instruction it is intended to evaluate.
- The nature of the test must depend on the purpose it is to serve, the nature of the group to be examined, and the conditions under which the test is to be administered.

- The test should never go beyond what has been taught.
- Oral examinations should be considered for students on subjects whenever appropriate.
- Questions should be worded accurately and concisely.
- The teacher must have a thorough knowledge of the area to be covered by the test.
- The teacher should be aware of the range of understanding and ability of the students to be tested.
- Teachers should have their tests reviewed by colleagues to guard against ambiguity and irrelevance.
- The teacher should understand the elements of test development many helpful ideas for teachers are available through the bibliographical material in this document.

I. Standardized Achievement Tests

A number of instruments for measuring student achievement are available from publishers of commercial tests. These tests are of three general types - survey, subject, and diagnostic. In considering the general comments that follow it is essential to note that to be effective standardized achievement tests must be appropriately chosen, appropriately used, and interpreted by a qualified person. Less than this is unacceptable.

Standardized tests are constructed by specialists for specific purposes, usually to meet the needs of a variety of schools. They are useful as a record of student performance. However, the following hazards should be noted:

- It is very easy to misuse standardized achievement tests.
- Results should not be used to label students.
- The teacher is often the only person who can tell whether an achievement test is appropriate for use in a particular class of a particular school.
- The objectives for current programs often differ from those for which many tests were originally designed.

The information about an individual student states where he or she stands in comparison with the group in terms of general achievements measured by the test, but it does not tell the teacher:

- what the standard is;
- what particular learnings the student has acquired;
- how he or she got that particular score;
- how an achievement relates to the tasks of a specific curriculum;
- what the student should learn next.

Before a standardized test is administered, a careful check should be made to determine the extent to which the objectives of the test resemble the expectations of instruction in the particular school or classroom. The criterion for use should be that the tests benefit, not harm, an individual student. In the bibliography, reference is made to the Buros Mental Measurement Yearbook and the Ontario Guidance Centre Catalogue. Both are valuable aids in choosing commercial achievement tests.

Teachers have a responsibility to communicate appropriate and accurate information to the lay public about test purposes and test capabilities. A sample school-board policy regarding the use of standardized tests follows:

Policy in Regard to the Use of Standardized Group Tests of Achievement

1. *Standardized testing should be viewed, not in isolation, but rather in the total context of program-planning and evaluation.*
2. *Standardized tests of achievement may be given on an optional basis subject to the attached guidelines.*

Regarding Standardized Tests of Achievement

Standardized tests of achievement can be useful to teachers and administrators if used sensitively and appropriately. The following comments are intended to serve as guidelines for their use:

1. *Standardized tests of achievement are only one means of evaluating a program or an individual's progress. As such, they should be used sparingly and only in the context of the total program of evaluation.*
2. *The principal reason for the use of standardized achievement tests has been to provide a comparison of the individual or group achievement as measured against a national norm. If used in this way, account must be taken of social and cultural factors as well as the program that has been presented to the children.*
3. *Although standardized tests of achievement are primarily designed to afford a comparison against national norms, they can perhaps be more useful if the results are utilized to diagnose a program and if use is made of the results to remediate the program where need is indicated.*
4. *The person administering a standardized test of achievement should be sufficiently familiar with the program and the test to know whether or not the test is a fair measure of what has been taught.*
5. *If the tests are related to the objectives of the program, the results may be shared with the students who may then participate in evaluating their program.*

6. *Standardized tests of achievement are useful to teachers, students, and parents if the results are shared with parents so that they can better understand the student's school progress and problems.*

7. *The directions for the administration of any achievement test given should be carefully followed if the results are to be used in a comparative way.*

8. *When tests of achievement are given, it is advisable to have someone with special training and experience help in the selection of the test and in the interpretation of results.*

9. *Standardized tests of achievement in areas other than reading are of doubtful value if their dependence on reading skill plays a part in determining a pupil's score, e.g., low achievement in mathematics could really be a misnomer for low achievement in reading.*

10. *The use of standardized tests can be dangerous if one does not keep in mind the fact that the results of standardized tests of achievement fluctuate greatly from test to test and from time to time. It must also be remembered that no single set of test norms is wholly reliable.*

NOTE:

If a need is seen to administer a standardized test of achievement to an individual, small group, or class, some care needs to be taken in selecting a test that is well constructed and appropriate to the needs of the situation. The principal of each school has on hand a comprehensive review of reading tests which may be considered when a test is advised.

J. Mental Ability, Personality, Aptitude, and Interest Tests

It must be remembered that some tests are concerned with factors other than achievement: These factors include the ability, interest, personality, and aptitudes of students. The rights of the individual must be considered in testing any of these. Respect for the individual and for personal privacy is a prerequisite to all psychometric practice.

Before launching into this kind of testing, it is also wise to consider how useful the results may be. If such tests are used, it is necessary to arrange for collection, storage, and dissemination of pupil data that is closed to everyone not directly concerned. To do otherwise is to invite test abuse and public criticism. The value to the student should be the criterion for the use of any such tests. If there is any suspicion that a test may harm a student, it should not be used. A test with a definable purpose has merit, provided its use is valid and ethical. Within broad limits, group tests may be used to identify levels of ability, aptitude, achievement, and interest. Other tests are administered on a one-to-one basis.

Some tests may legitimately be used to assist in the evaluation of programs and traits of individuals. They have value for placement and counselling when other verifying evidence is available. Without such evidence, tests may become discriminatory, particularly for members of minority, economically deprived, and culturally different groups.

The text of a numbered memorandum dated May 19, 1976, concerning psychological testing of individual students, follows:

"Concerns have been expressed that the individual psychological testing of students may not always be handled with adequate care and attention to such matters as the protocol of parental involvement, the qualifications of those doing the testing, and the confidential treatment of the test results.

It is recommended, where individual psychological testing of students is conducted under school or school system auspices, that the board develop a policy statement to help ensure adherence to a number of fundamental principles:

1. In those situations where the student is a minor, an explanation of the reasons for the testing should be given to the parents, and their permission sought for the test to be conducted. An interview is considered a very appropriate way to introduce the topic, and it is recommended that this procedure be used wherever possible. An interview with the parents to discuss results of the testing is also recommended.
2. A number of school systems employ psychologists and psychometricians who may be involved in psychological testing. Other personnel may be permitted to conduct tests provided their competence to do so can be verified. There may be teaching personnel on staff who have had

diagnostic and other special training in the administering and interpretation of tests. It is a fundamental consideration to be able to assure those concerned that tests are conducted competently.

3. The personal nature of test results is recognized, and care should be exercised in protecting the confidentiality of the information. It is also recognized that the testing procedure and results should be for the educational benefit of the student, and therefore the information may need to be known by the principal and pertinent teaching personnel. Test reports may be placed, with parental approval, in the Ontario Student Record Folder."

K. Supportive Evaluation

Supportive evaluation comes from outside the immediate teaching-learning situation and is one method of confirming teacher-student evaluations. It can come from outside the classroom, from outside the school, or from outside the school system. Teachers often feel the need for external information and guidance. They may need feedback, but they do not necessarily need comparisons with others. Such information can be classified as supportive. This evaluation supplements the teacher's view of the student's performance and can help administrators and teachers to feel confident in their own assessments of expectations; it may also indicate the need for adjustments in organization, program, or teaching approach.

Supportive evaluation may take many forms. It may, for example, include:

- classroom observation by principals and colleagues;
- panels of teachers who discuss the performance of students from different classes;
- discussion of objectives and standards by teachers of the same divisions;
- examinations or standardized tests.

Here is the method used by one elementary school to validate pupils' work and to establish reasonable expectations. Teachers ranked the work of students on particular aspects of the curriculum to form a general order of merit. The work of a sample group was submitted to a central panel composed of teachers and other experts. The panel placed the sample group on a common scale. Teachers estimated whether their judgements were

correct, too lenient, or too severe in relation to a standard, and the findings of the panel were used for further discussion and action.

No matter what the approach, as much use as possible should be made of existing information, in particular the considerable knowledge held by teachers about their students.

Summary

It is obvious from each of the procedures outlined that evaluation is closely interwoven with teaching and learning. It is also evident that for all approaches the following principles should be considered:

- Evaluation should begin at the student's developmental level.
- The evaluation should be appropriate to the student's needs.
- The purpose of the evaluation should be accepted and clearly understood by both student and teacher.
- Evaluation should take the student's abilities into account.
- The results of the evaluation should be presented in a way that is relevant to the student.
- The individual student's reaction to the results of evaluation is important.
- Evaluation should be the basis for changes made in either program or teaching strategy.

The capsule descriptions of evaluation processes are intended to help teachers examine and clarify their own positions regarding evaluation and make any changes necessary to improve their own systems.

It is obvious that there are strengths and weaknesses in all methods discussed. Teachers are advised not to adopt a single approach. It is more fruitful to select elements of several methods. As an interim measure, teachers may wish to introduce some elements of a new approach while retaining an established procedure.

It is safe to say that a system of evaluation must be adaptable to changing conditions. Teachers, therefore, should frequently review whatever system is being used to make sure that it still produces the results intended. In this respect, the following questions need to be asked often:

- Why am I doing this?
- Why am I doing it this way?
- What effect does it have on the students? on the parents? on me? on the program?

In conclusion, whatever systematic and comprehensive procedures are adopted must be capable of being carried out successfully. As emphasized previously, the onus is on educators to devise a system that will provide information that is not only accessible and capable of being understood but also the basis for effective decision-making regarding each student's progress.

Chapter III: Summarizing and Interpreting Student Achievement

Education is not a steeple-chase, a race to get ahead, in which each contestant is required to clear regularly spaced hurdles, and the space between the hurdles is used to recover equilibrium and regain momentum.

J.G. Althouse
Addresses by J.G. Althouse, 1945

We must not overdo sowing seeds of competition in the hearts and minds of children and expect to reap constructive, co-operative personalities.

H.H. Hannam
The Second Canadian Conference Report, 1962

...better ways will be found to summarize and report student accomplishments, so that grading, as now practised, can be discontinued. For the present, however, it seems likely that most schools will continue to give grades.

E.I. Sawin
Evaluation and the Classroom Teacher, 1969

The evaluation processes just described can be expected to yield much information - what the student has learned, how he or she has learned it, his or her successes on one day and failures on the next. If such information is to be useful, the teacher must summarize it, interpret it, and give it form so that it can be recorded and used as the basis for judgement, for change, and for communication.

This chapter deals with the place of marks and other indicators in summarizing a student's learning. It explores a range of symbols used by teachers to inform students,

parents, and colleagues of the accomplishments of a student, and it discloses the dangers and benefits of each.

From Information to Symbol

Teachers have access to a wide range of information about students and their progress. The problem comes when relevant information must be chosen, judgements made, and a concise report delivered to colleagues, parents, or students.

Information about a student's achievement is a first essential in making any such report. However, information must be accompanied by judgement. Thus, while a science mark of 90 per cent is informative up to a point - at least it implies satisfactory progress one should recognize the limited nature of such information.

If the process of summarization is carried to an extreme, the record will show only that Anne Thomas has a mark of 62 per cent in mathematics or a B in English. In a process of this kind, much first-order information has been lost -- and the loss is not reversible: grades and marks cannot be converted back into the rich information from which they were derived.

In many schools, however, grades and marks are supplemented by folders of student work that contain samples of visual art, records of experiments, tapes of conversations in French, checklists of accomplishments in gymnastics, a record of books read, a diary of a trip to a neighbouring province, or a few pages from a mathematics notebook. All of these provide information not only for the student but for anyone examining the folder.

Sometimes a folder can include quantitative items. Most student achievements are not directly measurable, but a few can be expressed in numerical form. In physical education, for example, it is easy to find out whether a student can chin the horizontal bar one time or ten; speed of typing can be expressed in words per minute; a student's second language vocabulary can be estimated; and, in chemistry, the number of symbols a student knows can be recorded. Work folders supplement the stark information provided by a symbol.

Anecdotal Records

Words are more informative than numbers; thus, the anecdotal report that conveys both information and judgement is also a useful way of communicating information. Anecdotal reporting of achievement is common in Ontario schools, either forming the entire report or supplementing letter grades and per cent marks. The following comment of a teacher of science about a boy's ability to experiment ranges from past difficulties to expected continued success:

> *It took him a long time to accept the responsibility for learning. Now that he has, he is doing very well. He has found that he is quite capable of doing his own thinking and planning and that is what is necessary for anyone to learn anything. He also has found that he can do an experiment well, and that once he gets into it, it becomes more interesting. He observes and explains reasonably well. All this should improve next term as he gets more practice.*

There is a growing body of opinion that anecdotal reporting, since it recognizes achievement without drawing comparisons,

supports a better classroom atmosphere. A student is more likely to see that his or her individual progress matters if the day-to-day events of the classroom are observed and identified.

Grading Systems

Although both student folders and anecdotal reports are used widely, there is no question that grades and marks are in common use. Most Ontario teachers regard day-to-day observation of student work as a prime source of information on which to base evaluation, but nearly as many consider formal or informal tests essential. Such end-of-unit tests and year-end examinations, usually set by individual teachers, provide the raw data for grading systems.

Number Systems

The 0-to-100 grading system is in wide use in Ontario. Per cent grades are used to indicate student achievement in most secondary school courses and also at the senior levels of many elementary schools. Per cent systems based on examinations have the merit of simplicity: if all questions are answered perfectly, the mark is 100 per cent; if half the possible points are correct, the mark is 50 per cent. In a rough way, per cent grades are not matters of judgement.

To the degree that per cent marks convey information in a quantitative way, their use in evaluation supports learning. Unfortunately, over the years blanket qualitative judgements have become associated with per cent grades. For example, in many schools per cent marks of 75 per cent or more are termed honours or even first-class honours. In the past, students who received less than 50 per cent were not permitted to move ahead for more

advanced work; they failed. Under the credit system today, students receive a credit - or they do not - for a course completed. They may be required to repeat a course but not a whole year's work.

Letter Systems

Approximately 40 percent of Ontario schools make some use of a letter system for reporting student progress. Such systems commonly use the letters A, B, C, D, and sometimes E and F.

One advantage in the use of the letter grades, as compared with percent grades, is the reduction in the number of categories. Whereas percentages provide for 101 categories, letter systems seldom have more than five. Side effects of grading practices, such as discouragement and excessive rivalry, are lessened when letter grades are used. Further, the reduction in the number of categories decreases the difficulty in justifying the classification of a student's achievement.

As with number systems, however, problems appear when a letter system is linked to promotion and failure, rather than with acceptability of work. Many adults do not make the distinction between the evaluation of aspects of a student's work and the recognition of his or her worth as an individual. At present, some schools record achievement in these terms: outstanding, satisfactory, or unsatisfactory. When these letters (O, S, U) are used, it is very easy for a student or an adult to think that the person is unsatisfactory. Self-concept can be seriously lowered and learning hindered in these circumstances.

In this connection it is encouraging to note that rank-in-class has become a less common feature in Ontario schools. The practice of ranking has made many able students vulnerable to

teasing, has fostered snobbery, and has caused the less able students to suffer humiliation.

Other Approaches

Grading systems alternative to percentages and letters can involve a category containing two exclusive conditions. For example, the terms credit and no credit imply a judgement made on the basis of information. Pass and incomplete are used where the emphasis is on completion of certain requirements; pass and fail are used are used where there is an implication that a student has reached, or not reached, an agreed standard. In some schools, no grades are assigned. Students in such schools have stated that there is a greater spirit of co-operation with their classmates than when they were competing with other members of their class. Such statements support the contention that the motivation to learn does not depend on grading.

Summary

Grading of student achievement, based though it is on information, involves consideration, judgement, and decision. This process will be based on many premises. Teachers usually state their expectations early in the course and throughout the development of the course. Sometimes they list their aims and objectives; sometimes these are unstated but real. Students have their own aspirations of which teachers are often aware. Furthermore, parents and others in the wider community have expectations as well.

Teachers have the difficult task of examining all the available information, as well as the expectations and hopes of all concerned with the particular student, before making a judgement. This judgement will be used in the future education of

the child and will be shared with those concerned.

Whether a judgement is expressed by a numerical or letter symbol, whether it is supplemented by a folder of student work or an anecdotal record, or whether no grades are used at all depends on the circumstances in each school.

At all times, then, teachers and principals should examine whatever system they are using with open minds. Does it benefit the students? Does it, to be more specific, help students learn to evaluate themselves? Does it provide the basis for making fruitful decisions about student progress? Does it provide useful information to parents, employers, and guidance personnel within the school? How precise is it in describing student progress? Is it simple and understandable? Does it foster rivalry or co-operation, embarrassment or self-confidence among students - or among parents? Does it lead to learning that is motivated by grades? In the end, the true test of any system of grading is the contribution it makes to the student and his learning.

Chapter IV: Communicating Student Achievement

A key aspect of evaluation is communicating the results to others. This document has dealt with the process of evaluation and with ways of summarizing the abundant information available to the teacher. Ultimately, the results must be communicated to others.

Those receiving information about evaluation have varying requirements. The teacher must decide how much detail would be useful for each, how much would be confusing, and at what intervals communication would be most effective.

In communicating information about student achievement, more detail is probably required today than formerly. Many of those receiving information may be unfamiliar with policies that accommodate individual differences, offer broader learning opportunities, and encourage local responsibilities for program. If they are to understand the communications they receive about student progress, they must be helped to understand standards, goals, and objectives; the progress of evaluation; grading symbols; and the place of the student in the evaluation process. Methods of communicating progress must take all these requirements into account.

To ensure that a system of communication is fulfilling the function for which it was devised, teachers are advised to review it constantly. The following questions may be helpful in this regard:

- Why communicate?
- What can this system communicate?
- What should be communicated?

- Who should do the communicating?
- When should the communicating occur?
- How should information be communicated?

At some point, teachers will have to find out whether communication procedures are conveying the information required and whether parents, administrators, students, and others are understanding it. Recipients of information should be better equipped to:

- understand the student's individual abilities;
- develop and plan programs, resources, and teaching strategies suited to each student:
- co-operate with the school on the basis of greater understanding of policies and practices (in the case of parents);
- understand and reconcile differences in teaching strategies, programs, and priorities (in the case of teachers in different divisions);
- take responsibility for both programs and achievements (this might apply to both teachers and students);
- increase their support of current educational goals through understanding (in the case of parents or the general public);
- improve supervisory and administrative help for teachers (this would apply to administrators);
- articulate the needs and goals of those concerned with the educational process.

Communications that achieve these results can be considered successful. Teachers may also want to consider the specific needs of the recipients of reports.

Students must be kept informed of their own progress to help them make rational decisions about what to learn and how to learn. As mentioned frequently in these pages, self-evaluation by students is an important goal of evaluation. It is essential that students find out from an informed source how far they have advanced towards their objectives and how far they have still to go. They also need help in using this information to plan remediation for areas of weakness and expansion for those of strength.

Other Teachers

Individual teachers within a school system must understand and support each other's programs, partly in the interests of consistent communication with those outside the school and partly for the sake of continuity in the students' education. If such understanding is to develop, the individual teacher must begin by understanding his or her own values, which are being passed on to students either consciously or otherwise. Only by such self-analysis can the teacher comprehend the significance of other programs.

The methods of communication among colleagues can vary. Perhaps two or three teachers may discuss problems spontaneously. Possibly a more wide-spread exchange of information might be arranged for staff meetings or professional activity days. Several days at the beginning of the school year may be devoted to discussions of this nature.

Sometimes the whole question of external communications is the theme of a workshop that involves the teachers of one school or of a family of schools. This method is particularly valuable because it implies consistency throughout the student's educational continuum and because it provides the opportunity for dealing with problem areas.

Some teachers, for example, are nervous before parent-teacher conferences. Workshops on the subject can provide the confidence that comes from the sharing of experiences. Workshops can also give a clear view of the purpose of external communication. Aspects that might be reviewed would include:

- the needs of staff, students, and parents;
- the needs of the school, the school system, and the community;
- the kinds of organization of both time and personnel that will achieve the desired ends;
- the convenience of both school staffs and parents;
- continuity of communication.

Parents

Among the most important recipients of information about student progress are parents and guardians. At a time of rapid change, the school experience of one generation differs considerably from that of the next. It is understandable that some parents are bewildered -- and sometimes sceptical -- of what they do not comprehend and that they are concerned about the education of their children. Teachers must supply the

information that enables them to understand.

The traditional way to communicate with parents has been through the report card. This method of communication is still a valuable part of school life. Since it may be seen by a number of recipients other than parents, however, it is being treated separately. This section will deal with more informal ways of communicating.

One way to meet parents is through parent-teacher conferences. Although usually arranged by the teacher or by the school administration, such a meeting may be initiated by either students or parents.

If it is to succeed, a parent-teacher conference must be characterized by openness based on trust. Each participant -- parent, teacher, and student if present -- should feel able to speak freely, secure in the knowledge that what is said will be treated in confidence. There should be no prying. All participants should recognize that some things will go unsaid and personal privacy should be respected.

Many teachers are nervous about meeting parents. Parents are often fearful as well. Such anxieties may be all that are communicated in an extreme situation, especially where one of the two covers nervousness with an aggressive manner. No matter where the anxiety begins, teachers have the responsibility of establishing rapport.

Fears of parent-teacher conferences can be allayed in a number of ways. Workshops of the kind suggested earlier, for example, may help teachers develop the necessary skills and

acquire confidence. Sometimes a fairly simple technique will solve the problem: sending home information to the parents before the conference can provide an easy starting point. Some teachers find that an interview may be more successful if it can be held during school hours when students can be called in if required.

In a successful parent-teacher meeting, the teacher should gain as much information as is given. Parents can provide information about a student's past experiences or future ambitions. Sometimes student reactions to something that went on in school can be clarified through information drawn out through casual questioning.

The teacher - or other members of the school staff if present - should decide in advance on what information should be imparted. Other information may be requested by either parents or students. Therefore, the teachers at the interview should be prepared to provide information about:

- the purposes and objectives of the program, how it is developed, and what resources are available;
- changes in teaching strategies;
- the relation of the individual to the school and the system;
- advantages and disadvantages of both the organization and the resources;
- research studies, surveys, and experiments that apply to the student's program.

The teacher should also be prepared to give specific information about the student, including:

- mastery of skill and contents;
- progress in the context of standards;
- potential and abilities (based on interpretation of specific information);
- learning in all aspects of the program including social, physical, and intellectual;
- strengths and weaknesses;
- needs for change.

Evaluation by the student of his or her own work should also be included. It is helpful to have some of the student's own work on hand.

Although the parent-teacher conference is of inestimable value, it is time-consuming and teachers may want to use other methods to maintain contact with parents between meetings. These could include telephone calls; visual information such as work folders, projects, notebooks, and letters; video and audio tapes; school displays and demonstrations; and parent visits during classroom activities. Since these methods arise from regular classroom activities, they lend themselves to informal and frequent communications with parents.

Written Reports

The methods of communication discussed so far have been oral. Some information must be set down on paper, however - first on the Ontario School Record (as required by law) and second on the school report card (if required by the school system). Classroom teachers contribute the basic information that is used in both.

In the case of the Ontario School Record, the principal is, admittedly, responsible for its maintenance. The classroom teacher, however, provides the information that is summarized and kept year after year. In fact, in many cases, the teacher summarizes and interprets the information as well. The teacher, therefore, has a considerable responsibility towards the contents of the Ontario School Record. He or she should be fully cognizant of what kind of information is needed for such permanent records and fully capable of exercising the professional judgement required to collect it.

The Ontario School Record is intended to provide a consistent format for students' records. Use of the Ontario School Record should be based upon a clear understanding of the following:

- The principal of a school, as mentioned previously, is responsible for the establishment and maintenance of the student record folder.
- The principal may delegate all or some of these responsibilities to the teaching staff.
- Information should only be retained in the student folder for the purpose of improving instruction.

- The record may only be seen or used by supervisory officers, principal and teachers, parents or guardians of the student, and by the student.
- A student and/or his or her parents or guardians may ask a principal to correct an inaccurate record or to remove information if it is not considered conducive to the improvement of instruction.
- No action can be brought against any person as a result of the content of a record.

In addition to the standard information such as name and birthdate, the Ontario School Record must contain cumulative achievement information and related data about school life. It may also contain documents, photographs, or such records as sample work, test papers, or anecdotal records and interview summaries that reflect current information. In choosing information for the folder, teachers may restrict their comments to the observation of specific behaviour and its context, without expressing any opinion, or they may include personal reactions to student behaviour.

It is also possible to include material that gives a picture of the student's school life on more than academic terms. Such material might deal with health, extracurricular activities, referrals to services or agencies, and talents or special abilities. Some principals will be reluctant to enter some of this information on an OSR card. Others will consider it necessary for the use of teachers in future years. Such information, if included, must be treated with care.

The outside of the folder gives the essential bench marks of the student's progress. It must, however, be supported by Student Achievement Forms which give more detailed information. Some schools now use the Student Achievement Form as the regular report card sent home to parents, while others use a report card of their own devising and enter the information on the Student Achievement Form later. Still others use a combination; what is now becoming increasingly common is a multiple-copy self-carbon format. In this kind of report, space is left for each term's report to parents. These pages are perforated while the others (unperforated) are exact duplicates and meet the requirements of the regulations for the Student Achievement Form. The carbons can therefore be kept in the OSR folder.

The content of report cards, no matter what their format, will provoke discussion. Report cards often reach a wider audience than other means of communicating and must therefore satisfy the needs of more people. The paramount consideration, however, is one that must be answered by the teachers and principal of a school. Does the report system used give an adequate picture of the student's progress?.

Report cards should give a clear summary of the student's achievements and should also enable teachers to report upon feelings, values, and other aspects of the affective domain. To do this, schools often include some of the following in the report:

- rating scales to describe progress and sometimes to represent mark ranges;
- numerical marks or letter grades plus ratings;

- percentile rankings;
- graphs;
- individual and group profiles;
- anecdotal comments of cognitive, affective, social, emotional, and physical development;
- achievement ratios with effort ratings;
- many forms of student self-evaluation instruments;
- skill ratings, marks, grades, and evaluative words;
- comments on achievement only;
- affective scales, grades, or evaluative word ratings;
- checklists;
- notes about work habits and attitudes;
- single concept ratings;
- comments about progress towards completion or credit;
- total credits to date;
- a record of the number of classes, units, sessions, or days missed;
- diagnostic recommendations.

Frequently, specific and detailed explanation or comment about the report content, purposes, and objectives are printed as a foreword.

The written report is useful, but it must be supplemented by personal contact wherever possible if it is to bring about reasonable understanding of the student's progress.

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This book explains how new forms as assessment are required for individualized instruction. The task of finding the measuring instrument for individualized instruction becomes that of seeking to determine where students are in relation to their goals - not where they stand in relation to other members of the class or other persons of their age.

Porter, Nancy, and Taylor, Nancy. How to Assess the Moral Reasoning of Students: A Teacher's Guide to the Use of Lawrence Kohlerg's Stage-Developmental Method. Toronto: OISE, 1972.

Renker, Marcia M., and Bush, Stephen J. Advice into Action: Guidelines for Developing a Pupil-Assessment System. Syracuse: Eastern Regional Institute for Education, 1971.
The purpose of this guide is three-fold: (1) to make administrators and teachers aware of the need for a pupil-assessment system geared to the school's curriculum; (2) to provide direction and resource information to school personnel in developing an assessment system; and (3) to provide a scheme that will actively involve all school personnel in the development and implementation of the assessment system. Available ERIC. ED 093 799.

Rothney, John W., ed. Evaluating and Reporting Pupil Progress. Washington: National Education Association, 1972.
This inexpensive research summary discusses reporting practices, philosophies of marking, the purposes of marking, and the assets and liabilities of various marking and reporting practices. Emphasis is placed on the findings of representative research studies.

Sprague, Jo. Evaluation: Problems in Evaluating Speech Communication Performance. 1971.

This brief paper argues that a teacher's subjective responses should be combined with more extensive use of peer evaluation and self-evaluation. All of these forms of feedback provide subjective but relevant sources of information. Accountability for instruction may be established by a description of the processes a student goes through, and course grades may be determined in terms of the performances for which the student receives credit.

Performance-contracting, process-concept grids, and other techniques are suggested as means for minimizing measurement and maximizing useful evaluation and teacher accountability. Available ERIC. ED 061 223.

Swick, Kevin, and Lamb, Morris. Evaluating Social Learning Behaviours in the Open Classroom. 1974.

A brief overview describes the necessary components of an effective social-learning evaluation system for the open classroom. The appendices contain three diagrams which provide examples of possible assessment techniques and evaluation forms. Available ERIC. ED 095 998.

Terwilliger, James S. Assigning Grades to Students. Glenview, Ill.: Scott, Foreman, 1971
This book contains general guidelines for the evaluation of student performance in the classroom. Some explanations are rather technical.

Wong, Martin R., and Raulerson, John D. A Guide to Systematic Instructional Design. Englewood Cliffs, N.J.: Educational Technology Publication, 1974.
Intended for the classroom teacher as well as the instructional developer, this handbook describes how the systematic design of instruction can lead to improved learning. It brings together principles, theories, and applications from the fields of psychology, education, and systems design.

York, L. Jean, et al. Evaluation of Team Teaching and Children's Continuous Progress. Volume VI. Dallas, Texas: Leslie Press, 1971.

Volume VI deals with the purposes and functions of reporting and evaluating pupil progress in a continuous progress program. Both global and behavioral objectives for the volume are stated.

Articles

Adkins, Arthur. "Testing: Alternative to Grading." Educational Leadership (1975): 271-73.

If tests have their uses, aside from grading, then asking students to help select material for them, prepare them, score them, and analyse them should be a valuable learning experience at any level.

Airasian, Peter W. "Evaluation for Measuring, for Diagnosis." Improving College and University Teaching (1974):213-24.

This article advances the theory that formative and summative evaluation can be applied to on-going as well as terminal evaluation of student learning.

Airasian, Peter W., and Madaus, George F. "Functional Types of Student Evaluation." Measurement and Evaluation in Guidance (1972):221-33.

This article defines four types of student evaluation - placement, formative, diagnostic, and summative - and indicates the multiplicity of roles and techniques applicable to evaluating a student's progress.

Biggs, J.B. "Learning and Evaluation: Two Sides of the Same Coin." Elements: Translating Theory Into Practice (1972):4-8

Evaluation, learning, and instruction are complex and interrelated processes. A sound philosophy and methodology of evaluation demands that evaluation be considered in this context.

Blain, Beryl B. "Evaluation: An On-Going Process, A Decision-Making Tool." AV Guide: The Learning Media Magazine (1972): 16-17.

The main theme in this article is the role of evaluation as a "decision-making base for revising the structure of a course" and as a means for students to determine whether they are achieving course objectives.

Boeckenhauer, Melvin, and Bonas, Richard F. "Evaluation of Junior High Reporting: Parental Survey." Illinois School Research (1972): 45-52.

Many school systems are experimenting with new ways of reporting pupil progress. This study monitors parent reaction.

Brown, Don W. "Look, Mom, Here's My Video Report Card!" AV Instruction (1972): 20-2.

This article discusses how records of individual students' performances in the classroom can be presented to their parents in video form.

Case, Lloyd A. "Interactive Computer Grade Counselling." American Journal of Physics (1973): 1019-20.

This article describes the use of a basic language program to calculate and report grades, especially to counsel students about their progress. It indicates that students' weaknesses or strengths are determinable through estimates of their future grade performance.

Chansky, Norman M. "Resolving the Grading Problem." Educational Forum (1973): 189-94.
Various types of grading and non-grading suggestions are reviewed.

Chansky, Norman M., and Shaw, M. "Development of Grading Preferences in High School Students." Education (1973): 336-8.
One hundred students at each level in grades 7, 9, and 12 were asked to rate each of fifteen marking plans on a scale from one to five. The best liked were "Honour-Good-Average-Fair-Poor", contract grading, and "Good-Satisfactory-Unsatisfactory, but not failing". Least liked was "Grades, but students not told". Differences in preferences were attributed to differences in evaluation needs.

Chavan, D.D. "Role of the Teaching in Evaluating Student Learning." ATA Magazine (1971): 34-5.
The factors and procedures a teacher should consider in evaluating what students have learned are outlined.

Clayton, Dean, and Moles, Louis. "Evaluation in Individualized Instruction". Business Education Forum (1971) 20-3.

Evaluation of individualized instruction in accounting assists the teacher in determining whether the student is meeting the objectives of the accounting course. Evaluation further serves as a process through which the teacher and student can make decisions concerning the student's rate of progress in attaining the objectives of the course.

Collins, Peter M. "Suggested Changes for Student Evaluation." College Student Journal (1972): 84-5.
The author concludes that whether grading in the schools is retained as it is, altered, or abolished, some form of evaluation is essential in the educational process; the mode chosen should be the one most conducive to the actualization of the purposes of education.

DiSibio, R.A. "A Different Approach to Grading." Education (1971): 34-5.
The author believes that the grading systems now employed are meaningless and that a combination of student self-evaluation, teacher scrutinization, and teacher-parent-student conferences could be the formula for the future.

Ediger, Marlow. "Reporting Pupil Progress: Alternatives to Grading." Educational Leadership (1975): 265-67.
The criteria of excellence in assessing pupil achievement are indicated. The telephone is suggested as a means of reporting pupil progress.

Elliot, J. "Evaluation of Cognitive Achievement." Ontario English Catholic Teachers' Association Review (1972): 39-41.
This article outlines some unobstructive measures of student achievement - such as reports of student interests and language samples - which might be used in addition to standardized and teacher-made tests.

Evans, David N. "Standards Are Needed for CRT's!" Educational Leadership (1975): 268-70.
Many test publishers and educators feel strongly that APA standards are needed for the development and validity of criterion-referenced tests (CRT).

France, Norman. "Evaluation in the High School: Fact or Fiction?" Education Canada (1971): 14-18.
Most provinces are abandoning departmental examinations and are instead leaving pupil assessment to the schools themselves. However, suspicion of local standards is still current. To close the gap the author suggests procedures that would use the teachers' professional judgements and produce an evaluation as valid as any external examination.

Gatta, L.A. "Analysis of the Pass-Fail Grading System as Compared to the Conventional Grading System in High School Chemistry." Journal of Research in Science Teaching (1973): 1:3-12.

A study was conducted to compare the effects of pass-fail and conventional five-point grading systems on student achievement, teaching practices, teaching techniques, and student attitudes. The sample consisted of eight groups of chemistry students. Analysis of data indicated lower achievement scores and poorer attitudes of students on the pass-fail system.

Giannangelo, Duane, M., and Lee, Kivi Yoon. "At Last: Meaningful Report Cards." Phi Delta Kappan (1974): 630-31.
This pilot study used computer-assisted reporting, yielded positive responses from students and parents alike - and found the costs moderate.

"Guidelines for Working with Grade-Point Average and Rank-in-Class." NASSP Bulletin (1972): 67-82.
It is recommended that high schools continue to compute grade-point averages; however, only estimated rank-in-class should be provided to colleges unless requested otherwise.

Hartman, Catherine L. "Describing Behaviour: Search for an Alternative to Grading." Educational Leadership (1975): 274-77.
Each educator must clearly know his or her own beliefs and objectives and be able to plan teaching procedures and evaluation methods congruent with these objectives. An example of such practice is given.

Hiner, N. Ray. "The Cultural Function of Grading." Clearing House (1973): 356-61.
The author uses the anthropological concept of ritual to raise new questions concerning this process.

Hoffman, Robert E. "Student Evaluation and Principles of Learning." Journal of Business Education (1974):333-4.
Seven principles of learning are examined as they relate to student evaluation. It is suggested that student evaluation can help the teacher discover weaknesses and strengths in the evaluation methods while diagnosing the weaknesses and strengths of the students' learning.

Hollands, Roy. "Assessment Workshop-Understanding". Mathematics in Schools. (1972): 26-7.
The difficulty of assessing mathematical understanding; some literature and research on the question of measures of understanding; and some examples of items on a test used to measure mathematical understanding are all discussed.

Holmes, Mark. "An Alternative Method for Presenting Student Evaluation Grades in the Secondary School." School Guidance Worker (1972): 45-52.
This article suggests combining the basic principle of the letter-grade system with the principle of rank-scaling. It also suggests consultation among teachers, principals, and department heads to reduce inconsistencies in marking systems.

Holmes, Mark. "The Case For and Against Criterion-Referenced Tests." School Guidance Worker (1974): 11-16.
Criterion-referenced tests, it is claimed, have a norm element in them, and standardized tests include a criterion element. It is suggested that both types of tests have a place in education.

Kirschenbaum, H. "Boxed in by Grades." Teacher (1973): 46-8.

The author contends that no educational research has ever shown that grades are helpful to children or to learning. He also lists eight major criticisms of the traditional grading system.

Knicley, B. "Can Tests Help Students? Yes? ... and No?" School Guidance Worker (1974): 35-41.
Guidance counsellors are urged to become better informed about measurement and evaluation and to use standardized tests in assisting students. It is also suggested that counsellors take the lead in promoting the complete overhaul of teacher-made tests and of the grading system in public education.

Ladas, Harold. "Grades: Standardizing the Unstandardized Standard." Phi Delta Kappan (1974): 185-7.
The author believes that grades should be awarded for the achievement of stated goals - not for attendance, effort, self-concept improvement, or conflict avoidance. In a companion article, Neil Postman offers a different view.

Leary, James L. "Assessing Pupil Progress: New Methods Are Emerging." Educational Leadership (1975): 250-52.
Commitment is recommended as a critical element of the learning cycle; the evaluation of progress is thereby more personalized and student achievement improved.

Loar, Robert L. "An Alternative to Exact Rank-in-Class." NASSP Bulletin (1972): 100-3.
Los Alamos High School uses a docile method of reporting student class ranks to colleges.

MacKay, Lindsay D. "Roles for Evaluation in Science Courses." Australian Science Teachers Journal (1973): 7-14.
This is a summary of the variety of roles that measurement and evaluation can play in improving the quality of instruction in science. Three types of evaluation are distinguished (preparative, formative, and summative evaluation), and the purpose and value of each type in the instructional process are analysed.

Moulds, Henry. "To Grade or Not to Grade: A Futile Question." Intellect (1974): 501-4.
The various no-grade evaluation options recently introduced on the academic scene are, according to this view, grading in disguise.

Mulski, John H., and Levy, Matthew. "When a Computer Fills Out Students' Report Cards." Industrial Education (1972): 57-9.

A trial system uncovers ways to personalize individual evaluation.

Murray, Robert Ellis. "Evaluation: The Educational Phenomenon." Man/Society/Technology (1974): 139-41.
The single, most important use of evaluation in education is in adapting instruction to differing pupil needs. Evaluation can be used to find the pupil's level of aptitude and from this to design learning experiences for his or her particular needs.

Neel, Thomas E. "Classroom Performance Standards." Thirst for Education Leadership (1972): 17-20.
This is an analysis of three evaluative systems: norm-referenced achievement tests: criterion-referenced evaluation; and norm-based tests as criterion instruments.

O'Hanlon, James. "A Guide to Pass-Incomplete Grading." Clearing House (1973): 138-41.
This is an outline of how successful pass-incomplete grading works.

Ohles, John F. "Learning Efficiency: A Base for Evaluation." Clearing House (1972): 409-11.
The author discusses the evaluation of student achievement on "a base geared to individual aptitude and progress".

Palmer, D.G. "Approaches to Moderation." Australian Mathematics Teacher (1972): 23-5.
The problem of maintaining a reasonably unified standard of mathematics achievement throughout the state of Tasmania is discussed. Various test-construction techniques are described and analysed.

Parker, Steve. "It's Time for Evaluation." Man/Society/Technology (1974): 154-6.
A basic method of class evaluation for vocational and industrial teachers employs tools and concepts the craftsman has already mastered. Also given is a system for determining end-of-unit grades, based in part on standards of the trade in question.

Pike, John M. "Pass - No Pass: Ultimate Grading System?" Clearing House (1973): 376-9.
The experiment described in this article indicates that the achievement of a high school class graded on a pass - no pass system was equal to that of a class receiving traditional letter grades.

Prock, L.M. "Ethical Implications of Evaluating Students." BC Teacher (1972): 294-7.
This is a new look at the definition of terms used in evaluation - sampling, reliability, objectivity, and validity. It is suggested that these are the true bases for ethical approaches to the evaluation of students.

Quann, C. James. "Pass/Fail Grading: Panacea or Placebo?" Journal of the National Association of College Admissions Counsellors (1972): 11-13.
A survey of the literature points to the conclusion that research thus far has failed to substantiate the success of the pass-fail grading option.

Romberg, Thomas A., and Braswell, James. "Achievement Monitoring Via Item Sampling: A Practical Data-Gathering Procedure for Formative Evaluation. Journal of Research in Mathematics Education (1973): 262-70.
A method of making formative evaluations is put forward to assist developers of mathematics programs. The method involves periodic achievement-testing via item-sampling. Details of item construction, periodic testing, and profile construction are given in a discussion

of how this method was applied to modify a sixth-grade mathematics program.

Sartore, Richard L. "Grading: A Searching Look." Educational Leadership (1975): 261-64.
The theme here is that youngsters should succeed in school, not through the threat of grades, but because they are interested, motivated, and sincerely desire to pursue knowledge.

Scarcelli, Robert E. "Estimated Rank Instead of Exact Rank." NASSP Bulletin (1972): 105-6.
The author is principal of a school that gives estimated rank by "quintile, fourths, upper-middle", etc.

Schmidt, P.K. "Use of Tests in School Guidance." School Guidance Worker (1972): 17-21.
This article advances the theory that tests, if properly understood and interpreted, can make a valuable contribution to the growth of self-understanding and can play an important part in decision-making.

Seyfort, Warren C. "The Facts in the Case: What Secondary Schools Do and Think About Rank-in-Class." NASSP Bulletin (1972): 41-66.
Results of a study involving over 800 secondary schools are presented in this article.

Shane, June Grant, and Shane, Harold G. "Ralph Tyler Discusses Behavioral Objectives." Today's Education (1973): 41-6.

A pioneer in the study of behavioral objectives presents insights into the proper focus for educational objectives.

Shapiro, E. "Educational Evaluation: Rethinking the Criteria of Competence." School Review (1973): 523-49.
The author is concerned about whether testing perpetuates a misevaluation of children's abilities.

Simon, Sidney B., and Hart, Lois. "Grades and Marks: Some Commonly Asked Questions." Science Teacher (1973): 46-8.
The authors argue forcefully that the assignment of grades can have more deleterious than beneficial effects in education. The theme that grading should be abolished is developed through a series of commonly asked questions about the evaluation of students.

Simon, Sidney B., and Hart, Lois. "The Great American Grading Game." National Elementary Principal (1973): 29-33.

This article identifies four fallacies about grading and suggests ways the principal can start the process of change.

Stephens, John. "More Informative Than Rank-in-Class. NASSP Bulletin (1972): 96-9.
The University School of Milwaukee eliminated class rank and substituted a bar-graph system, which is illustrated and explained in this article.

Tillman, Murray H. "Formative Exercise T-TE-15A, Formative Exercise T-TE-15B." Journal of Educational Measurement (1974): 220-22.
Two testing packets, Formative Exercises T-TE-15A and T-TE-15B, are reviewed. The exercises are based on Bloom's concept of learning for mastery and are designed to acquaint teachers with the principles of mastery learning. They provide examples of formative evaluation.

Wahlstrom, M.W. "Evaluation in the Electronic Era." School Guidance Worker (1972): 29-9.
Various uses of computers in test development and administration are discussed.

Walling, Donovan R. "Designing a Report Card that Communicates." Educational Leadership (1975): 258-60.
The author looks at some of the qualities needed in constructing a more effective and supportive reporting system.

Watson, James. "Must they compete? Must we compare?" Teacher (1973): 65.
Ways to minimize the detrimental elements of competition and comparison are discussed.

Whitmore, D., and Wahlstrom, M. "The Standardized Test in Classrooms" School Guidance Worker (1974): 4-10.
The authors discuss the availability, purposes, and uses of various kinds of standardized tests.

Williams, Reed G., and Miller, Harry G. "Grading Students: A Failure to Communicate." Clearing House (1973): 332-7.

Alternatives are suggested for making grades more meaningful.

Wise, Robert I., and Newman, Betty. "The Responsibilities of Grading." Educational Leadership (1975): 253-56.
This is an outline of the task-referenced standard of evaluating and reporting which has emerged with the recent trends towards individualized instruction and criterion-referenced-test interpretation.

Wolf, Robert L. "Making Education Accountable to the Learner." Journal of Research and Development in Education (1971): 37-48.

Standards for evaluating transactions that comprise the learning process are required for an understanding of the individual learning experience.

Multidisciplinary

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